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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/781,079

02/17/2004

Norman Rice

115243.00005

1827

21324

7590

06/01/2004

HAHN LOESER & PARKS, LLP
TWIN OAKS ESTATE
1225 W. MARKET STREET
AKRON, OH 44313

EXAMINER

CYGAN, MICHAEL T

ART UNIT

PAPER NUMBER

2855

DATE MAILED: 06/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/781,079	RICE, NORMAN	
	Examiner	Art Unit	
	Michael Cygan	2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>17 February 2004</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 4, 5, 8, 11, 14, 15, 18, and 19 are rejected under 35

U.S.C. 102(b) as being anticipated by O'Hara (US 3,619,072). O'Hara discloses the claimed invention, a method of evaluating engine operation comprising receiving a oil sample from an engine and determining a profile of particulates in the oil, the profile having predetermined characteristics providing an indication of the operating condition of the engine and indicating whether the particulates are engine-based or oil-based. The profile of wear and breakdown (degradation) products is used as an "early warning system" to assess reliability, predict failure and operating condition of the electrical equipment. Engines are considered to be "electrical equipment" as claimed, since the claims are given their broadest possible interpretation during examination, and engines utilize electrical energy during operation. See entire disclosure, especially Figure 1; column 1, lines 6-56; column 2, lines 30-75; and column 3, lines 22-75. The particulate profile includes mechanical wear particles and dirt

(column 2, lines 62-75), thus indicating the source (interior or exterior) of the particulates. The oil is subjected to a composition profile, the analysis being performed by infrared spectroscopy, and the composition including oil oxidation products, non-volatile hydrocarbons (glycols) and nitration products (nitrates); see column 3. Comparison of the profiles to standard reference profiles yields information on engine wear and oil degradation; see column 2, lines 68-75; column 3, lines 23-27 and 31-70. The analysis acts as an "early warning system", enabling prediction of a maintenance status of the engine and oil; see column 1, lines 32-34.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 2 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Hara (US 3,619,072) in view of Reintjes (US 5,572,320). O'Hara teaches the claimed method except for providing information relating to the presence of techtites, which are spherical particles (see applicant's specification paragraph 0026 at page 9). Reintjes teaches a method of determining a profile of particulates in oil through optical shape analysis. The profile characteristics include the shape, size, and aspect ratio of the

particles, and the type of particles including those produced from cutting wear (cutting particles); see column 1, lines 21-35 and column 5, lines 16-39. This optical shape comparison would indicate the presence of spherical particles (i.e., techtites). The profiling occurs through optical magnification (microscopy); see column 2, lines 1-9 and column 3, lines 6-27. The shapes are "classified", with the classification results indicating engine conditions, operating status, and prediction of nearness to engine failure; see column 5, lines 25-29. The analysis is performed on-line; see abstract and Figure 1. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use information relating to the presence of techtites as taught by Reintjes in the invention taught by O'Hara to form part of the profile, since Reintjes teaches optical shape comparison and sizing to determine engine condition and failure prediction.

2. Claims 3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Hara (US 3,619,072) in view of Reintjes (US 5,572,320) as applied to the rejection of claim 2, further in view of Fishgal (US 4,625,923). O'Hara teaches the claimed method except for providing information relating to the presence of filming, fibres, coking, ferrous and non-ferrous particles, oil oxidation, or machined (tempered metallic) particles. Fishgal teaches a method of evaluating an insulating dielectric liquid comprising obtaining a sample of lubrication oil and determining a profile of the contaminants such as

filming (col 3 ln 10), fibres (col 1 ln 19), coking (col 1 ln 44), ferrous and non-ferrous particles (col 3 ln 27-28), oil oxidation (col 3 ln 8), or machined (tempered metallic) particles (col 1 ln 18-24) in the oil through ferrography or optical microscopy to determine the reliability and working life of the lubrication system; see column 1, lines 11+ and columns 3-4. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use information relating to the presence of filming, fibres, coking, ferrous and non-ferrous particles, oil oxidation, or machined (tempered metallic) particles as taught by Fishgal in the invention taught by O'Hara to form the profile, since Fishgal teaches such features to distinguish the reliability of a lubricated system.

3. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Hara (US 3,619,072) in view of Butler (US 5,691,706). O'Hara teaches the claimed invention except for application to electric power transfer devices such as transformers, circuit breakers, or load tap changers. Butler teaches the necessity of monitoring the lubricating fluid in electric power transfer devices such as transformers, circuit breakers, switches, or load tap changers to determine if degradation is present; see columns 1 and 2, and column 4 lines 3-18 and 44-50. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use electric power transfer devices such as transformers, circuit breakers, switches, or

load tap changers as taught by Butler in the invention taught by O'Hara as the tested system, since this would bring the predictive properties of O'Hara to a system which would benefit from such advanced prediction and testing techniques.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 6, 7, 16, and 17 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 7 of U.S. Patent No. 6,691,557 B1 in view of O'Hara (US 3,619,072). The '557 claims the instantly claimed invention (see claims 1, 4, and 7), except for performing failure prediction and reliability assessment. O'Hara teaches a method of gathering a profile of wear and breakdown (degradation) products which is then used as an "early warning system" to assess reliability, predict failure and operating condition of the electrical equipment; see entire

disclosure, especially Figure 1; column 1, lines 6-56; column 2, lines 30-75; and column 3, lines 22-75. It would have been obvious to one having ordinary skill in the art at the time the invention was made to perform failure prediction and reliability assessment as taught by O'Hara in the invention set forth in claim 7 of the '557 patent to evaluate the operation of the equipment, since O'Hara teaches such determinations to form an early warning system to prevent equipment malfunction.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Jones (US 4,492,461), Peterson (US 4,894,532), Bird (US 5,646,047), and Gupta (US 5,343,045).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Cygan whose telephone number is (571) 272-2175. The examiner can normally be reached on 8:30-6 M-Th, alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on 571-272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2855

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael Cygan
Primary Examiner
Art Unit 2855